



VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Twice Amended) A method for producing a mixture of nucleic acids, said method comprising:

(a) providing an array of distinct single-stranded probe nucleic acids of differing sequence where each distinct probe present on said array comprises a constant domain and a complement variable domain;

(b) hybridizing nucleic acids complementary to said constant domain with said array of single-stranded probe nucleic acids to produce a template array of overhang comprising duplex nucleic acids, wherein each overhang comprising duplex nucleic acid of said array comprises a double-stranded constant region and a single-stranded variable region overhang; and

(c) subjecting said template array of overhang comprising duplex nucleic acids to a primer extension reaction that produces a solution phase product comprising a mixture of nucleic acids of differing sequence; and conditions under conditions sufficient

(d) separating to produce said mixture of nucleic acids from said template array.

5. (Twice Amended) A method for producing a mixture of a plurality of distinct deoxyribo-oligonucleotides of differing sequence, wherein each distinct deoxyribo-oligonucleotide of said plurality comprises a different variable domain V, said method comprising:

(a) providing an array of a plurality of surface immobilized distinct single-stranded probes, wherein each distinct surface immobilized single-stranded probe present on said array is described by the formula:

surface-L-R-F-cV-5'

wherein:

L is an optional linking domain;

R is a recognition domain;

F is a functional domain; and

cV is a complement domain having a sequence that hybridizes under stringent conditions to a variable domain of one of said distinct oligonucleotides of said plurality;

(b) contacting said array of a plurality of surface immobilized distinct single-stranded probes under hybridization conditions with a population of nucleic acids of the formula:

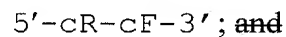
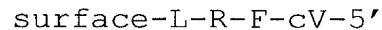


wherein:

cR is the complement of R; and

cF is the complement of F;

whereby a template array of overhang comprising duplex nucleic acids is produced, wherein each overhang comprising duplex nucleic acid of said array is described by the formula:



(c) subjecting said template array of overhang comprising duplex nucleic acids to a primer extension reaction that produces a solution phase product comprising a mixture of nucleic acids of differing sequence; and conditions

(d) separating said mixture of nucleic acids from said template array,  
to produce said mixture of a plurality of distinct deoxyribo-oligonucleotides of differing sequence, wherein each distinct constituent of said plurality comprises a different variable domain V.